Amendments to the claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-39. (Canceled).

40. (Currently amended) A method of forming an electrochemical cell, the method comprising

(a) printing a layer of positive pole powder onto a first substrate;

(b) printing a first layer of electrolyte on said positive pole layer, wherein said first electrolyte layer comprises a first self-forming separator layer ingredient;

(c) printing a layer of negative pole powder onto a second substrate;

(d) printing a second layer of electrolyte on said negative pole layer, wherein said second electrolyte layer comprises a second self-forming separator layer ingredient; and

(e) contacting said first substrate and said second substrate readily facilitating interaction between said self-forming separator layer ingredients in said positive pole layer and said negative pole layer to self form an interfacial separator layer between said negative pole layer and said positive pole layer.

41. (Original) The method of claim 40, further comprising the step of printing an ink prior to step (a) onto at least one of inner sides of first and second substrates, said ink being a current conductor.

42. (Currently amended) A method of forming an electrochemical cell, the method comprising

(a) printing a layer of positive pole powder onto a first substrate;

(b) printing a first layer of electrolyte on said positive pole layer, wherein said first electrolyte layer comprises a first self-forming separator layer ingredient;

(c) printing a layer of negative pole powder onto a second substrate;

(d) printing a second layer of electrolyte on said negative pole layer, wherein said second electrolyte layer comprises a second self-forming separator layer ingredient; and

(e) contacting said first substrate and said second substrate with a thin layer interposed between said positive pole layer and said negative pole layer, wherein said thin layer comprises a third self-forming separator layer ingredient, readily facilitating interaction between said self-forming separator layer ingredients in said positive pole layer and said negative pole layer with said self-forming separator layer ingredient in said thin layer to self-form an interfacial separator layer between said negative pole layer and said positive pole layer.

43. (Original) The method of claim 42, wherein said positive pole layer and said negative pole layer are applied simultaneously onto said thin layer.

44. (Canceled).

45. (Currently amended) An all printed electrochemical cell comprising a printed negative pole layer, a printed positive pole layer, a printed electrolyte, and a self-formed ~~an interfacial~~ separator layer interposed ~~therebetween,~~ between said negative pole layer and said positive pole layer ~~are selected so as to self-form said interfacial separator layer upon contacting one with the other or with an optional layer interposed therebetween~~.

46. (Currently amended) The cell according to claim 45, wherein said pole layers ~~and said optional layer~~ are selected such that said electrochemical cell is sufficiently deliquescent for keeping said pole layers generally wet and sufficiently electroactive for obtaining ionic conductivity between said pole layers.

47. (Currently amended) The cell according to claim 45, wherein said ~~interfacial~~ self-formed separator layer comprises a polymer precipitate or a gel.

48. (Currently amended) The cell according to claim 45, wherein said ~~interfacial~~ self-formed separator layer self-forms via a physical interaction.

49. (Original) The cell according to claim 48, wherein said physical interaction results in a formation of a polymer precipitate or a gel between said pole layers.

50. (Currently amended) The cell according to claim 45, wherein said ~~interfacial~~ self-formed separator layer self-forms via a chemical reaction.

51. (Original) The cell according to claim 50, wherein said chemical reaction results in a formation of a polymer precipitate or a gel between said pole layers.

52. (Currently amended) The cell according to claim 45, wherein said ~~interfacial~~ self-formed separator layer self-forms via a physical interaction between at least one polymer and at least one polymer precipitating agent.

53. (Currently amended) The cell according to claim 45, wherein said ~~interfacial~~ self-formed separator layer self-forms via a physical interaction between at least one polymer and at least one electrostatic cross-linking agent.

54-58. (Canceled).

59. (Currently amended) The cell according to claim 45, wherein said ~~interfacial~~ self-formed separator layer self-forms via a chemical reaction between at least one polymerizable unit and at least one polymerization activator.

60. (Currently amended) The cell according to claim 45, wherein at least one of said pole layers ~~and said optional layer~~ includes a material that is both deliquescent and electroactive.

61. (Original) The cell according to claim 60, wherein said material includes zinc chloride.

62. (Original) The cell according to claim 45, wherein said positive pole layer includes manganese dioxide powder and said negative pole layer includes zinc powder.

63. (Original) The cell according to claim 62, wherein said negative pole layer further includes carbon powder.

64. (Original) The cell according to claim 62, wherein said positive pole layer further includes carbon powder.

65. (Canceled).

66. (Original) The cell according to claim 52, wherein said at least one polymer precipitating agent includes zinc chloride.

67-70. (Canceled).

71. (Currently amended) The cell according to claim 53, wherein said at least one polymer includes at least one ~~polysaccharide~~ anionically charged polymer.

72. (Currently amended) The cell according to claim 71, wherein said at least one ~~polysaccharide~~ electrostatic cross-linking agent includes ~~at least one carboxylated polysaccharide~~ zinc ions.

73. (Currently amended) The cell according to claim 71, wherein said at least one ~~polysaccharide includes sodium alginate~~ anionically charged polymer includes a polymer comprising a free carboxylic group.

74. (Canceled).

75. (Original) The cell according to claim 53, wherein said at least one electrostatic cross-linking agent includes zinc chloride.

76-80. (Canceled).

81. (Original) The cell according to claim 45, and further comprising at least one terminal in electrical contact with at least one of said pole layers.

82. (New) An all printed electrochemical cell comprising a printed negative pole layer, a printed positive pole layer, a printed electrolyte and a self-formed separator layer interposed between said negative pole layer and said positive pole layer, wherein said self-formed separator layer comprises a polymer precipitate or a gel formed by a deliquescent and/or adhesive polymer.

83. (New) An all printed electrochemical cell comprising a printed negative pole layer, a printed positive pole layer, a printed electrolyte and a self-formed separator layer interposed between said negative pole layer and said positive pole layer, wherein said self-formed separator layer comprises a polymer precipitate or a gel formed via an interaction between at least one polymer and at least one polymer precipitating agent or at least one electrostatic cross-linking agent.

84. (New) An electrochemical cell with controllable properties comprising:

a negative pole layer;

a positive pole layer; and

an integral and in-situ formed interfacial separator layer interposed therebetween, wherein at least one property of the formed separator layer is controlled by selection of electrolyte solution components in the negative and positive pole layers to facilitate controlling electrical and physical properties of the cell.

85. (New) The electrochemical cell according to claim 82, wherein at least one controlled property of the formed separator layer is at least one of thickness, porosity, and adhesiveness.

86. (New) The cell according to claim 45, wherein there is no separately added separator.